Travel Support for the Thirteenth Annual IFIP WG 11.3 Conference on Database Security (ONR Grant No. N00014-99-1-0632)

Final Report

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1 Conference Description

The *Thirteenth Annual Working Conference on Database Security* was held in conjunction with the annual meeting of IFIP Working Group 11.3 in Seattle, Washington on July 26-28, 1999. The purposes of the three-day conference were: (i) To provide a forum for the international computer security community to discuss the current state of research and practice in database and information systems security, (ii) To enable participants to expand their knowledge in security through personal contact with other researchers and practitioners in the field, and (iii) To disseminate widely the results of the conference and accompanying discussions, including original research, practical experiences and innovative ideas in database and information systems security.

A priority at the 1999 IFIP WG11.3 Conference was to investigate the applications of database security research in the Critical Infrastructure Protection (CIP) initiative. Other research questions addressed at the conference were:

1. What are good techniques for describing the various factors involved in designing secure database systems, such as:

   (a) Security and privacy policies or policy requirements
   (b) Threats to security
   (c) Costs/benefits of meeting security and privacy requirements (or risks of not meeting them)?

   What relationships should exist between these descriptions and those already associated with database systems, such as queries, views and schemes?

2. What are good methodologies for:

   (a) Obtaining these descriptions
   (b) Using them in developing secure database systems (including associated applications)
   (c) Determining with high assurance that the implemented systems are consistent with their descriptions and specifications?

3. What are the security issues associated with the organization of components (architectures) of database systems, such as networked systems (e.g., WWW), client/server architectures, and layered/modular internal system architectures? How does the integration, interconnection, and interpretation of heterogeneous database systems impact the security of components and the overall system?

4. What are the interactions and tradeoffs between functionality, performance and security in various technical features of database systems, such as query processing, data/object model, integrity maintenance, concurrency control/recovery facilities, and inference/deduction capabilities?

5. What information can be maintained or generated by a database system to assist in maintaining security or privacy, and what are good techniques for using such information, either at run-time or in subsequent analysis, to detect and discourage security violations?

6. What are the related security issues in applications areas? These areas include: Accounting and Audit, Authorization and Access Control, Authentication, Computer Security and Public Policy, Data/System Integrity, Electronic Commerce and Virtual Banking, Information Warfare, WWW and Internet Security, Intellectual Property Protection, Intrusion Detection, Privacy and Anonymity, Security for Digital Libraries, Security in Workflow Systems, Security in Mobile and Wireless Systems and Security Management.

2 Conference Program

The strong conference program included nineteen papers organized around eight sessions: Intrusion Detection, Role Based Access Control, Policy/Modeling, Workflow Systems, Data Mining, Multilevel Security, Temporal Authorization Models, and Object-Oriented Databases.

The keynote lecture on Information Security was delivered by Howard Schmidt, Director of Information Security, Microsoft Corporation. Catherine McCollum from DARPA presented an invited lecture on Cyber Control and Command Research.

Two panels, one on Critical Infrastructure Protection (CIP), and the other on Intrusion Detection were organized. Participants in the CIP Panel included Terry Mayfield (IDA), Donald Marks (NIST), Thomas Harper (Pacific Northwest National Laboratory) and William Maconachy (NSA). The panel on Intrusion Detection included T.Y. Lin (San Jose State), Chris Clifton (MITRE) and M.Y. Huang and Shayne Pitcock (Boeing).

A copy of the conference proceedings is included as an appendix to this report. Revised versions of the papers presented at the conference and the minutes of the panel discussions will be published as a book: Research Advances in Database and Information Systems Security, V. Atluri and J. Hale (Eds.), Kluwer, Norwell, Massachusetts, 2000.

3 Conference Participants

Forty-four individuals, ranging from graduate students to senior researchers, attended the conference. Thirty-one participants were from the United States. The others were from Australia (1), Canada (1), Germany (2), Greece (1), Italy (2), Japan (2), The Netherlands (1), South Africa (1) and the United Kingdom (2).

The conference program and the accompanying discussions of security issues were enhanced by a good mix of researchers from academia, industry, research organizations and the military. In addition to twenty-six university researchers (including three graduate students), there were six industry participants (two from Boeing and one each from Microsoft, Hitachi, Reliable Software Technologies and CignaCom Solutions), six from research organizations (five from MITRE and one from SRI International), and six from the U.S. Government, federal agencies or the military: one each from the NSA, DARPA, NIST, Institute for Defense Analyses (IDA), Pacific Northwest Laboratory, and NRL.

4 Travel Support

The ONR grant subsidized the travel expenses of eighteen conference participants, most of them were faculty members or students who might not have been able to attend the conference without travel support. To increase student participation and foster interaction with senior researchers, the grant covered all the expenses incurred by the three graduate student attendees.

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The Thirteenth Annual WG 11.3 Conference on Database Security was held in Seattle, Washington on July 26-28, 1999. The goals were (i) To provide a forum for the international computer security community to discuss the current state of research and practice in database and information systems security, (ii) To enable participants to expand their knowledge through personal contact with other researchers and practitioners, and (iii) To disseminate the results of the conference and accompanying discussions, including original research, practical experiences and innovative ideas. A copy of the conference proceedings is included as an appendix to this report. Revised versions of the papers and the minutes of the panel discussions will be published as a book: Research Advances in Database and Information Systems Security, V. Atluri and J. Hale (Eds.), Kluwer, Norwell, Massachusetts, 2000.

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